

What is claimed is:

1. A cleaning formulation adapted to be applied to a surface, the cleaning formulation comprising:
  - a cleaning composition present in an amount sufficient to provide cleaning efficacy; and
  - a brake dust barrier composition present in an amount sufficient to provide brake dust barrier efficacy;wherein the barrier composition after application to the surface is adapted to substantially prevent at least one of build-up and adherence of brake dust on the surface.
2. The cleaning formulation as defined in claim 1 wherein the brake dust barrier composition comprises at least one of film forming compounds, fluorinated compounds, and mixtures thereof.
3. The cleaning formulation as defined in claim 2 wherein the film forming compounds have antistatic properties.
4. The cleaning formulation as defined in claim 3 wherein the film forming compounds comprise at least one of sulfonated styrene/maleic anhydride copolymers, sulfonated polystyrenes, linear silicone/ethylene oxide copolymers, and mixtures thereof.
5. The cleaning formulation as defined in claim 2 wherein the film forming compounds comprise at least one of sulfonated styrene/maleic anhydride copolymers, sulfonated polystyrenes, linear silicone/ethylene oxide copolymers, modified polycarboxylate copolymers, acrylic polymers, silicone/acrylate copolymers, and mixtures thereof.
6. The cleaning formulation as defined in claim 2 wherein the fluorinated compounds comprise at least one of fluorosurfactants and mixtures thereof.

7. The cleaning formulation as defined in claim 6 wherein the fluorosurfactant comprises perfluorocarboxylic acid salts.

8. The cleaning formulation as defined in claim 1 wherein the cleaning composition comprises:

water; and

at least one anionic surfactant present in an amount sufficient to aid in emulsifying soils.

9. The cleaning formulation as defined in claim 8 wherein the at least one anionic surfactant comprises at least one of lauryl sulfates, alkyl sulfates, fatty acids, linear alkyl benzene sulfonates, alkyl diphenyloxide sulfonates, sulfosuccinates, phosphate esters, sulfated ethoxylates, and mixtures thereof.

10. The cleaning formulation as defined in claim 8 wherein the cleaning composition further comprises at least one dispersant present in an amount sufficient to aid in rinsing of soils.

11. The cleaning formulation as defined in claim 10 wherein the at least one dispersant comprises modified polycarboxylate copolymers.

12. The cleaning formulation as defined in claim 10 wherein the at least one dispersant further exhibits at least one of film-forming characteristics and corrosion inhibition properties.

13. The cleaning formulation as defined in claim 8 wherein the cleaning composition further comprises a chelating agent present in an amount sufficient to aid in control of water hardness ions.

14. The cleaning formulation as defined in claim 13 wherein the chelating agent comprises tetrasodium ethylenediaminetetraacetate (EDTA).

15. The cleaning formulation as defined in claim 14 wherein the chelating agent further exhibits hard water germicidal efficacy.

16. The cleaning formulation as defined in claim 8 wherein the cleaning composition further comprises at least one nonionic surfactant present in an amount sufficient to aid in removing oily soils.

17. The cleaning formulation as defined in claim 16 wherein the at least one nonionic surfactant comprises at least one of ethoxylated alcohol nonionic surfactants, alkyl phenol ethoxylates, glycol esters, alkyl polyglycosides, and mixtures thereof.

18. The cleaning formulation as defined in claim 8 wherein the cleaning composition further comprises a buffering agent present in an amount sufficient to render the formulation basic.

19. The cleaning formulation as defined in claim 18 wherein the buffering agent comprises sodium carbonate.

20. The cleaning formulation as defined in claim 18 wherein the pH of the formulation is between about 8 and about 12.

21. The cleaning formulation as defined in claim 8 wherein the cleaning composition further comprises a preservative.

22. The cleaning formulation as defined in claim 21 wherein the preservative is a biocide.

23. A cleaning formulation adapted to be applied to a surface, the cleaning formulation comprising:

a cleaning composition present in an amount sufficient to provide cleaning efficacy, wherein the cleaning composition comprises:

water; and

at least one anionic surfactant present in an amount sufficient to aid in emulsifying soils; and

a brake dust barrier composition present in an amount sufficient to provide brake dust barrier efficacy, wherein the brake dust barrier composition comprises at least one of film forming compounds, fluorinated compounds, and mixtures thereof;

wherein the barrier composition after application to the surface is adapted to substantially prevent at least one of build-up and adherence of brake dust on the surface.

24. The cleaning formulation as defined in claim 23 wherein the film forming compounds have antistatic properties.

25. The cleaning formulation as defined in claim 24 wherein the film forming compounds comprise at least one of sulfonated styrene/maleic anhydride copolymers, sulfonated polystyrenes, linear silicone/ethylene oxide copolymers, and mixtures thereof.

26. The cleaning formulation as defined in claim 23 wherein the film forming compounds comprise at least one of sulfonated styrene/maleic anhydride copolymers, sulfonated polystyrenes, linear silicone/ethylene oxide copolymers, modified polycarboxylate copolymers, acrylic polymers, silicone/acrylate copolymers, and mixtures thereof.

27. The cleaning formulation as defined in claim 23 wherein the fluorinated compounds comprise perfluorocarboxylic acid salts.

28. The cleaning formulation as defined in claim 23 wherein the at least one anionic surfactant comprises at least one of lauryl sulfates, alkyl sulfates, fatty acids, linear alkyl benzene sulfonates, alkyl diphenyloxide sulfonates, sulfosuccinates, phosphate esters, sulfated ethoxylates, and mixtures thereof.

29. The cleaning formulation as defined in claim 26 wherein the cleaning composition further comprises:

at least one dispersant present in an amount sufficient to aid in rinsing of soils;

a chelating agent present in an amount sufficient to aid in control of water hardness ions;

at least one nonionic surfactant present in an amount sufficient to aid in removing oily soils; and

a buffering agent present in an amount sufficient to render the formulation basic.

30. The cleaning formulation as defined in claim 29 wherein the at least one dispersant comprises modified polycarboxylate copolymers and further exhibits at least one of film-forming characteristics and corrosion inhibition properties.

31. The cleaning formulation as defined in claim 29 wherein the chelating agent comprises tetrasodium ethylenediaminetetraacetate (EDTA) and further exhibits hard water germicidal efficacy.

32. The cleaning formulation as defined in claim 29 wherein the at least one nonionic surfactant comprises at least one of ethoxylated alcohol nonionic surfactants, alkyl phenol ethoxylates, glycol esters, alkyl polyglycosides, and mixtures thereof.

33. The cleaning formulation as defined in claim 29 wherein the buffering agent comprises sodium carbonate, and wherein the pH of the formulation ranges between about 10 and about 11.

34. The cleaning formulation as defined in claim 29 wherein the cleaning composition further comprises a biocidal preservative.

35. The cleaning formulation as defined in claim 29 wherein the water is softened.

36. An automotive cleaning formulation adapted to be applied to a wheel surface, comprising:

a cleaning composition present in an amount sufficient to provide cleaning efficacy, wherein the cleaning composition comprises:

water;

sodium lauryl sulfate present in an amount sufficient to aid in emulsifying soils;

a modified polycarboxylate copolymer present in an amount sufficient to aid in rinsing of soils;

tetrasodium ethylenediaminetetraacetate (EDTA) present in an amount sufficient to aid in control of water hardness ions;

an ethoxylated alcohol nonionic surfactant present in an amount sufficient to aid in removing oily soils; and

a buffering agent present in an amount sufficient to render the formulation basic; and

a brake dust barrier composition present in an amount sufficient to provide brake dust barrier efficacy, wherein the brake dust barrier composition comprises a sulfonated styrene/maleic anhydride copolymer;

wherein the barrier composition after application to the wheel surface is adapted to substantially prevent at least one of build-up and adherence of brake dust on the wheel surface.

37. The automotive cleaning formulation as defined in claim 36 wherein the modified polycarboxylate copolymer further exhibits at least one of film-forming characteristics and corrosion inhibition properties.

38. The automotive cleaning formulation as defined in claim 36 wherein the tetrasodium ethylenediaminetetraacetate (EDTA) further exhibits hard water germicidal efficacy.

39. The automotive cleaning formulation as defined in claim 36 wherein the buffering agent comprises sodium carbonate, and wherein the pH of the formulation is between about 9 and about 11.

40. The automotive cleaning formulation as defined in claim 36 wherein the cleaning composition further comprises a biocidal preservative.

41. The automotive cleaning formulation as defined in claim 36 wherein the water is softened.

42. The automotive cleaning formulation as defined in claim 36 wherein the water is present in an amount ranging between about 50 wt.% and about 99 wt.%; the amount of sodium lauryl sulfate ranges between about 0 wt.% and about 10 wt.%; the amount of modified polycarboxylate copolymer ranges between about 0 wt.% and about 5 wt.%; the amount of tetrasodium ethylenediaminetetraacetate (EDTA) ranges between about 0 wt.% and about 5 wt.%; the amount of ethoxylated alcohol nonionic surfactant ranges between about 0 wt.% and about 5 wt.%; the amount of buffering agent ranges between about 0 wt.% and about 2 wt.%; and the amount of brake dust barrier composition ranges between about 0.1 wt.% and about 5 wt.%.

43. The automotive cleaning formulation as defined in claim 42 wherein the amount of water is about 90 wt.%; the amount of sodium lauryl sulfate is about 5 wt.%; the amount of modified polycarboxylate copolymer is about 1 wt.%; the amount of tetrasodium ethylenediaminetetraacetate (EDTA) is about 1 wt.%; the amount of ethoxylated alcohol nonionic surfactant is about 0.1 wt.%; the amount of buffering agent is about 0.2 wt.%; and the amount of brake dust barrier composition is about 2 wt.%.



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44. The automotive cleaning formulation as defined in claim 43 wherein the cleaning composition further comprises about 0.05 wt.% of a biocidal preservative.